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MEMORANDUM FOR EDITORS AND REPORTERS

James M. Beggs, Administrator of NASA, will deliver the attached speech at approximately 9:15 a.m. EST Jan. 9, 1985, at the Conference on International Business in Space at the Sheraton-Washington Hotel, Washington, D.C.

Here are some of the major points made in the address:

1. Space has three primary qualities with important commercial potential. Beggs discusses each in detail.

2. Commercial activity in space is capital intensive and requires long-term investment. But the level of business could reach several hundred billion by the turn of this centurye and there are enormous growth opportunities in the 21st century.

3. There has been a flurry of activity recently to pave the way for commercial entrepreneurs in space. Beggs outlines NASA's new Commercial Use of Space Policy. He explains the nature of commercial activities that will receive NASA support and outlines the details of the support.

4. A report on major commercial activity to date in space.

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Remarks Prepared for Delivery at

THE CONFERENCE ON INTERNATIONAL BUSINESS IN SPACE

9:15 a.m. EST
Sheraton Washington Hotel
Washington, D.C.

James M. Beggs
Administrator
National Aeronautics and Space Administration

Thank you. I am delighted to be here today, and want to congratualate the Center for Space Policy for organizing this event. This is probably the world's first conference on international business in space. It certainly won't be the last, however, because commerce in space is a burgeoning new field, which many now believe will be one of the greatest growth industries of the third millennium, only fifteen years away.

So this is a celebration, of sorts, and one for me personally, I might add, because it is my birthday. And around this time every year I usually recall a line by Shakespeare. It's from "Much Ado About Nothing," and goes, "When the age is in the wit is out."

That's a humbling thought, indeed, and I leave it to you to judge the truth for yourselves.

The subject that brings us together here today, however, leaves no room for doubt. And that is the enormous potential worldwide for the commercial use of space.

Not long ago, I read in the paper that a bank - the Lamar Savings Institution in Austin, Texas - has applied to state authorities to place a branch office on the moon. Now, some may believe that to be a bit too far-sighted; but it certainly is not too far-fetched. As the Texas Savings and Loan Commissioner said after receiving the application: "Somebody's going to do it. If it makes money they're all going to do it."

Indeed they are, because whether or not the request is granted, there is a good possibility that early in the 21st century there will be a permanently manned base on the moon. That base could be the center of a new industry - mining the rich lunar resources. Or it could be a way station to other points in the solar system and serve many other functions. And it will be made possible by the Space Station we are developing now.

The lunar base might very well include not only one branch bank, but several. History has taught us that entrepreneurship and competition have been indispensable to expanding frontiers on earth. And I've no doubt they will be in space, as well.

Some call space the endless frontier. And it is, indeed, endless; because no matter how far you go, there is always further to go. This frontier offers countless new opportunities to exploit. These opportunities too, are literally, boundless. And we have just begun to grasp them.

Let me say at the outset that these opportunities also are very capital intensive. They require large investments and are long-term. One can expect to reap the dividends only after 15 or 20 years or so. And there are risks - financial, institutional and technological risks - all of which must be taken into account.

But we believe that those who take the plunge will have a leg up on one of the great growth opportunities of the 21st century. Folks like Newt Gingrich and Bob Walker up in the Congress predict that space commerce worldwide will be a half a trillion-dollar industry by the turn of the century. And I believe it will approximate several hundred billion dollars. But to get to that point there must be investments.

There are a number of far-sighted companies that have begun to invest in space, and in a few minutes, I'll tell you about some of the exciting new things they are doing and what we in government are doing to alleviate the risks and help them get started. I hope that our friends from abroad in this audience, might find that some of the things we are doing might serve as a useful model as they prepare to expand their own activities on the commercial use of space.

There is much to learn about space. But we already know that it is no longer a completely alien and unknown frontier. In the more than quarter century we have been exploring it we have learned how to use it for our benefit on earth.

We launch satellites, and through them, revolutionize our communications patterns and capabilities, our earth resources observations, our weather forecasting and our navigational techniques. We can go into space and come back pretty routinely now with the Space Shuttle. We know how to rendezvous and dock in space and how to live there for months on end. We even developed the technology to put people on other worlds, and indeed, have done so.

Clearly, we know now that space is more that just a site for dramatic exploits, although we still have our fair share of those. We know that space can be tamed as a place for people to live and work and learn. And, step by step, we are doing that - expanding our capabilities to use its unique advantages to do new things in new ways.

The retrieval, repair and redeployment of the Solar Max satellite by our Shuttle astronauts last April and their dramatic 2.5 million-mile rescue of two errant communications satellites last November, are only precursors of the kinds of operations that will become routine once the permanently-manned Space Staton is operational in the early 1990s.

What are these unique attributes of space and what do they offer us?

Space has three primary advantages.

First, it gives us a magnificent vantage point for communications and for observations of the earth, the solar system and the universe. With only three satellites properly positioned in geostationary orbit, a person can communicate with anyone else on earth's surface. And because there is no obscuring atmosphere in space, a telescope, such as the Hubble Space Telescope we plan to launch in 1986, will be able to see vaster reaches of the universe and objects much fainter and more distant than we can see now with earth-based telescopes.

The second unique feature of space is zero gravity, which is zero times the acceleration of gravity. On earth, of course, we live in a 1G environment. But in zero G, forces that inhibit many processes on earth are not present.

Therefore, space offers opportunities for the manufacture of materials, such as pure crystals for industrial use, new medicines to help fight disease and a variety of other things with high profit potential that we simply have not imagined yet, because we are just beginning.

The third peculiarity of space is its near-perfect vacuum. Many industrial processes on earth require a huge vacuum, which is expensive to develop. But once you're in space you get it free, because there is a near-perfect vacuum in the wake of the Shuttle and other spacecraft.

These three attributes of space - the extraordinary vantage point, zero-gravity and the infinite near-perfect vacuum - all have important commercial potential. And we are beginning to understand how to harness that potential so that industry can take advantage of it.

More than 23 years ago, it was obvious that the first of these attributes - the vantage point - was very important. Communications satellites broke the barrier for business in space when NASA launched Telstar 1, the world's first commercial communications satellite, for AT&T. Since then NASA has launched 111 communications satellites, - less than half of which are now actively operating in geostationary orbit.

The communications satellite business is one of the fastest growing industries in the world, with an estimated market of more than $3 Billion a year in sales potential through the year 2000.

We have not yet succeeded in using the other two unique attributes of space for commercial gain. But we are working on it.

Indeed, last January when President Reagan directed NASA to build a permanently manned Space Station within a decade, he said: "Just as the ocean opened up a new world for clipper ships and Yankee traders, space holds enormous potential for commerce today."

On July 20, the President made investment and involvement of the private sector in space a national priority. He issued a national policy on the Commercial Use of Space, which is designed to ease the entry of private investment and to reduce the bureacratic barriers that have inhibited such investments in the past.

The President said then, "We'll do all we can to ensure ... that industry has routine access to space and a suitable reliable place to work there. And we'll do this without needless regulatory restraints." One of the first barriers to doing business in space was eliminated with a stroke of the President's pen on October 30. Now, this may come as a surprise to you, but he signed legislation to ensure that products made in space by American companies would not be taxed as imports!

Other measures the Administration will focus on will provide tax credits and other tax incentives for private investment in space-based ventures. Still others will facilitate the private sector's use of radio frequencies in space; protect trade secrets and patent rights of products manufactured there and expand industry's representation on advisory panels that help to set government R&D goals.

Recently, NASA issued a statement entitled the "The Commercial Use of Space," which defines the policy initiatives and new actions we will take to expand commerce in space. We also created a high-level office, headed by an old NASA hand, Ike Gillam, to assist industry and other financial entities to finance and conduct business in space.

Our policy paper has been very well received. The other day the Wall Street Journal called it a "Galactic Homestead Act", and indeed, it is. Just as the 19th century Homesteaders earned land by taming the Wild West, so, we believe, will today's space entrepreneurs help to tame the space environment by teaming up with government to expand business in space.

We will support three major initiatives. First, and most important, are new high technology ventures; second, new commercial applications of existing technology; and third, unsubsidized initiatives that would transfer existing space assets on earth to private hands if they could be operated for profit.

We intend, in short, to reduce the technical, financial and institutional inefficiencies and impediments that have, up to now, inhibited business from going into space.

On the technical side, we will support business in a number of ways. We will open our eight research centers around the country and encourage industry, including non-aerospace industries, to use them. Our engineers and scientists will be available for discussions with their industry counterparts. We plan also to establish scheduled flight opportunities on the Shuttle for commercial payloads, and support development of our facilities for commercial space ventures.

To reduce financial risks, we will continue to offer the Joint Endeavor Agreement, which allows NASA to offer free transportation into space for industry-sponsored experiments with promising commercial potential. As long as industry continues to fly with us, we will protect the proprietary nature of their experiments.

To reduce institutional risks, we are trying our best to make it easy to get on board the Shuttle - in a short time and without the drawn-out procedural reviews we have had in the past. We will try to assure integration and flight of a standard commercial payload no later than six months from the time we begin to process it. And we plan to shorten that period as we build up experience in flying those payloads.

So, as you can see, this is no passive program. We are serious and we intend to make it work.

Let me give you a few examples of some of the extremely promising ventures already underway.

The first is one I talk about all the time and it is very exciting. And that is the continuous flow electrophoresis apparatus being flown by Johnson & Johnson Company and McDonnell Douglas. The electrophoresis technique has been used for years on earth. It is a means of separating very pure quantities of biological material from a biological mass.

It works well on earth, but not near as well as it works in space, where it separates the material out hundreds of times faster and with much greater purity than it does here on earth.

After clinical tests and FDA approval, the companies plan to begin production of their product in 1987 aboard a free-flying space platform to be serviced by the Shuttle.

The sponsors have invested many millions of dollars in this venture and will say only that their product is a life-saving hormone, which they are confident will be a commercial success. The first electrophoresis experiment was flown aboard Skylab back in the early 1970s. Assuming that the companies will be marketing the product by the late 1980s, which is their goal, we can see that any potentially successful commercial endeavor in space, as I said earlier, requires commitment for the long-haul.

Other companies are following in the wake of these pharmaceutical pioneers.

We have an agreement with the John Deere Company, the farm implement firm. They are exploring ways of developing new alloys and new crystalline structures in space and believe they will be successful. The idea here is not to manufacture these products in space on a large scale, but to develop samples, if you will, that might be duplicated on earth.

We also have an agreement with 3M. They are interested in developing organic crystals and thin films in space. Both have very important applications on earth. The company has submitted a proposal to us that would allow it to fly 72 experiments on the Shuttle by 1992, and eventually to move into the Space Station. We are going to consider their proposal very seriously and I think we probably will approve it.

Very soon, the first products made in space will go on sale. They are called monodisperse latex spheres. Each is incredibly tiny - about 10 micrometers in diameter - and all are the same size. A vial of 15 million of these spheres is as big as my index finger. They have been certified by the Bureau of Standards and will be marketed by a small company in northern New Jersey.

The company believes the spheres have an annual market potential of $200 million to $300 million in the world calibration industry market alone. But that potential could increase to perhaps a billion-dollar industry because they can also be used to monitor air pollution particles, and such finely ground products as paint pigments, ink or explosives; or in such medical applications as counting red blood cells.

We are also encouraging private sector initiatives in a host of other space-based services, including launchers, upper stage rockets and in ground-based services, such as Shuttle payload integration.

As we look to the future, we believe that our friends in Europe, Canada and Japan will accept President Reagan's invitation not only to join us in developing the Space Station, but in operating it as well.

This will be a great opportunity for all of us in the Free World to make the investments on the public side that are so necessary to spur investments from the private sector. For developed and developing countries alike, space is not only an endless frontier for exploration, but a potentially rich arena for profitable commerce to benefit all mankind.

More than 350 years ago, the Pilgrams were readying themselves for their great voyage to America. There were those who wavered, however, because they feared the dangers of the unknown. William Bradford, who chronicled their adventure, gave us an idea of how their apprehensions were dealt with in his journal. He wrote:

"It was answered that all great and honorable actions are accompanied with great difficulties and must be both enterprised and overcome with answerable courage. It was granted that the dangers were great but not desperate; the difficulties were many, but not invincible."

And so it is in our efforts to expand the realm of commerce in space. The difficulties are great, indeed. But they are not invincible. And for our part, the United States stands ready to move forward, in cooperation with peace-loving people everywhere, to work to transform the promise of space into a brighter tomorrow for all mankind. Thank you very much.

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